

REMARKS

Reconsideration of this application, as amended, is respectfully requested.

1. Drawings

The objection to the drawings under 37 CFR 1.83(a) insofar as it concerns the alleged missing “second pressure source” is respectfully traversed. Both of the claimed first and second pressure sources are shown in the drawings. For example, paragraph [0051] of the specification (as amended in the amendment filed May 24, 2006) states in connection with the description of FIG. 4:

To achieve the multi-level purge methods described above, an ALD apparatus 400 having a second purge conduit that is introduced upstream of the chemical gas switching manifold and in parallel with the first purge conduit is provided. This arrangement (which may be termed a dual flow purge manifold) is illustrated in Figure 4. Both purge sources may be pressure controlled (e.g., using pressure controllers 409 and 411) with set points of pressure that can be widely different. Given the current state of the art, the pressure controllers 409 and 411 cannot be fast gas switched below several hundred milliseconds (however, future pressure controllers may allow for direct, fast electronic control). We avoid this shortcoming by passing the pressurized gas through fast switching pneumatic valves (with conductances determined by the conduit lines, elbows, valve and any restrictor components in the lines between the pressure controllers 409/411 down to and including the entrance 428 to the reactor 410).

This description taken in conjunction with the illustration provided in Fig. 4 would appraise one of ordinary skill in the art that pressure controllers 409 and 411 are examples of the first and second “pressure sources” recited in claim 56. Hence, the objection to the drawings should be removed.

The objection to the drawings under 37 CFR 1.83(a) and 1.84(p)(5) insofar as they concern the alleged missing element 113 is respectfully traversed. Element 113 is shown in Figure 1 (see the valve 113 below source 104). While investigating this issue it was noted that element 113 was not specifically described in the specification, hence amendments to paragraph 35 are set forth above to correct this deficiency. No new

matter is added by these amendments inasmuch as the valve, element 113, was included in Fig. 1 as originally filed. Hence, the objection to the drawings should be removed.

The objection to the drawings insofar as it concerns elements 402 and 403 is respectfully traversed. References to element 403 have been removed from the specification by the corrections to paragraph 52 above and by the corrections to paragraph 51 that were included in the amendment filed May 24, 2006. Element 402 is properly labeled as the precursor-switching manifold described in paragraph 57 of the specification. Hence, no corrected drawings are required.

2. Specification

The objections to the specification are moot in view of the above amendments.

3. Claim Rejections

The present claims are patentable over Hamilton, US 5993555, in view of Sakai, US 5070813.

The Office Action admits that Hamilton does not describe the presently claimed second / downstream gas flow pathway having switchable conductances as recited, respectively, in claims 56 and 62, but seeks to combine the teachings of Sakai regarding downstream flow control with feedback to reject the claims. This conclusion is flawed. For example, even if the teachings of the references were combined in the manner suggested in the Office Action, one would still not arrive at the present invention because the resulting combination would not provide for controlling the various flow limiting conductances as recited in the claims.

The Office Action would purport to overcome this deficiency by characterizing the distinctions as “intended uses” of the present invention which should be accorded no patentable weight. Such a characterization is incorrect, however. In the case of claim 62, a structurally significant recitation of the configuration (e.g., the programming) of the equipment is set forth as: the upstream flow limiting conductances and downstream flow limiting conductances [being] configured to switch operational modes in time-phase with

one another. Claim 56 has been amended to recite similar structural features. Hence, the rejections of the claims should be removed.

Adding the teachings of Cox, US 6228773, does not alter the above. Cox is cited for teaching external plasma sources, but this does not address the underlying deficiencies in the above-discussed references. Hence, the claims are patentable over the combination of Hamilton, Sakai and Cox.

If there are any additional fees associated with this communication, please charge Deposit Account No. 19-3140.

Respectfully submitted,

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